WHAT IS CLAIMED IS:

1. An image coding method comprising:

estimating motion vectors between an input image to be coded and a reference image;

synthesizing a prediction image of the input image using the motion vectors and the reference image;

generating a difference image by calculating a difference between the input image and the prediction image; and

outputting coded information of the input image including information related to the difference image and the motion vectors,

wherein said synthesizing the prediction image includes calculating intensity values at points where no pixels actually exist in the reference image by interpolation,

wherein said interpolation is done according to information specifying a positive rounding method or a negative rounding method when a current frame of the input image is a P frame, and

wherein said interpolation is done using a predetermined rounding method which is a positive rounding method or a negative rounding method when the current frame of the input image is a B frame.

2. An image coding method according to claim 1, wherein said predetermined rounding method is a positive rounding method.

3. An image coding method according to claim 2, wherein:

said positive rounding method is performed in accordance with the following equations:

Ib=[(La+Lb+1)/2] ; Ic=[(La+Lc+1)/2] ; Id=[(La+Lb+Lc+Ld+2)/4], and

said negative rounding method is performed in accordance with the following equations:

Ib=[(La+Lb)/2] ; Ic=[(La+Lc)/2] ; Id=[(La+Lb+Lc+Ld+1)/4],

where La is an intensity value of a first pixel in the reference image, Lb is an intensity value of a second pixel in the reference image which is horizontally adjacent to the first pixel, Lc is an intensity value of a third pixel in the reference image which is vertically adjacent to the first pixel, and Ld is an intensity value of a fourth pixel in the reference image which is vertically adjacent to the second pixel and horizontally adjacent to the third pixel, Ib is an interpolated intensity value at a midpoint between a position of the first pixel and a position of the second pixel, Ic is an interpolated intensity value at a midpoint between the position of the first pixel and a position of the third pixel, and Id is an interpolated intensity value of a midpoint between the position of the first pixel, the position of the second pixel, the position of the third pixel, and a position of the fourth pixel.

4. An image coder comprising:

a memory to store a reference image which is a previously decoded image; and

a synthesizer to estimate motion vectors between an input image to be coded and a reference image, to synthesize a prediction image of the input image using the motion vectors and the reference image, to generate a difference image by calculating a difference between the input image and the prediction image, and to produce coded information of the input image including information related to the difference image and the motion vectors,

wherein the prediction image is synthesized by calculating intensity values at points where no pixels actually exist in the reference image by interpolation, and

wherein the interpolation is done according to information specifying a positive rounding method or a negative rounding method when the current frame is a P frame, and using a predetermined rounding method which is a positive rounding method or a negative rounding method when the current frame is a B frame.

5. An image coder according to claim 4, wherein said predetermined rounding method is a positive rounding method.

6. An image coder according to claim 5, wherein:

said positive rounding method is performed in accordance with the following equations:

Ib=[(La+Lb+1)/2] ; Ic=[(La+Lc+1)/2] ; Id=[(La+Lb+Lc+Ld+2)/4], and

said negative rounding method is performed in accordance with the following equations:

Ib=[(La+Lb)/2] ; Ic=[(La+Lc)/2] ; Id=[(La+Lb+Lc+Ld+1)/4],

where La is an intensity value of a first pixel in the reference image, Lb is an intensity value of a second pixel in the reference image which is horizontally adjacent to the first pixel, Lc is an intensity value of a third pixel in the reference image which is vertically adjacent to the first pixel, and Ld is an intensity value of a fourth pixel in the reference image which is vertically adjacent to the second pixel and horizontally adjacent to the third pixel, Ib is an interpolated intensity value at a midpoint between a position of the first pixel and a position of the second pixel, Ic is an interpolated intensity value at a midpoint between the position of the first pixel and a position of the third pixel, and Id is an interpolated intensity value of a midpoint between the position of the first pixel, the position of the second pixel, the position of the third pixel, and a position of the fourth pixel.